DETAILED ACTION

Response to Amendment

1. In response to the office action from 12/7/2007, the applicant has submitted an after final amendment, filed 3/6/2008, canceling all previous rejected claims and amending claims 35-40 in order to overcome the previous 35 U.S.C. 101 rejections (*Amendment, Pages 13-14).* Applicant's arguments/amendments have been fully considered and claims 15-20, 35-40, 55-60, and 75-80 are allowable over the prior art of record with respect to the below examiner's amendment and reasons for allowance.

2. As the applicant has amended claim 35 to include a "non-volatile" computer readable storage which clearly differentiates statutory mediums from non-statutory mediums *(see specification, Page 23)*, the examiner notes that one aspect of the previous 35 U.S.C. 101 rejection has been overcome. The below examiner's amendment overcomes the other 35 U.S.C. 101 issue *(see Prior OA, Page 5)* because it alters the claims to specifically include the term "computer" readable medium.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James C. Scheller *(Reg. No. 31,195)* on 3/12/2008.

4. The application has been amended as follows:

In claim 35, lines 1-3, change "A non-volatile machine-readable storage medium having machine-executable instructions that when executed by a machine cause the machine to perform a machine-implemented method comprising:" to -- A non-volatile computer-readable storage medium having computer -executable instructions that when executed by a computer cause the computer to perform a computer-implemented method comprising:--.

In line 1 of claims 36-40, change "non-volatile machine readable storage medium" to -- non-volatile computer-readable storage medium--.

Allowable Subject Matter

5. **Claims 15-20, 35-40, 55-60, and 75-80** are allowable over the prior art of record

6. The following is an examiner's statement of reasons for allowance:

With respect to **Claims 15, 35, 55, and 75**, the prior art of record fails to explicitly teach or fairly suggest, either individually or in combination, a method/system/computer-readable medium storing a program that determines an optimal boundary for speech synthesis units based

on an average discontinuity between created feature vectors around a phoneme segment boundary *(Fig. 2)* that correspond to centered pitch periods and that are created using a singular value decomposition of a matrix W that is defined in claims 15, 35, 55, and 75.

Although Narayan *(U.S. Patent: 5,490,234)* discloses a method for determining an optimal boundary point between speech synthesis diphones *(Col. 11, Line 50- Col. 12, Line 8)*, George et al *(U.S. Patent: 6,304,846)* discloses centered pitch periods are well known for use in speech synthesis concatenation *(Col. 12, Line 63- Col. 13, Line 2)*, and Ahlbom et al *("Modeling Spectral Speech Transitions Using Temporal Decomposition Techniques," 1987)* discloses a method for obtaining vector values for determining diphone break points using a singular value decomposition of a matrix Y *(Pages 13-14)*, the combination of the prior art of record does not teach feature vector creation for optimal boundary determination using a singular value decomposition of the specific matrix having elements based on centered pitch periods as defined in claims 15, 55, and 75. Although George discloses using centered pitch periods for concatenation and Ahlbom discloses the use of singular value decomposition of a matrix to determine diphone break points, the combination of the teachings of George and Ahlbom does not explicitly teach or suggest how centered pitch periods can be used to construct the singular value decomposition matrix defined in claims 15, 55, and 75 to create two feature vectors used in the distance calculation defined on page 16 of the specification, the result of which is subsequently utilized in selecting new unit boundaries for speech synthesis.

The further dependent claims additionally limit allowable parent claims, and thus, are also allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached at (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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3/14/2008

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